This is Exhibit "A" referred to in the Affidavit of RENUGA GOPAL Relating to U.S. Patent Application 10/743,562

And

sworn before me this day of September, 2007

A Commissioner for taking Affidavits

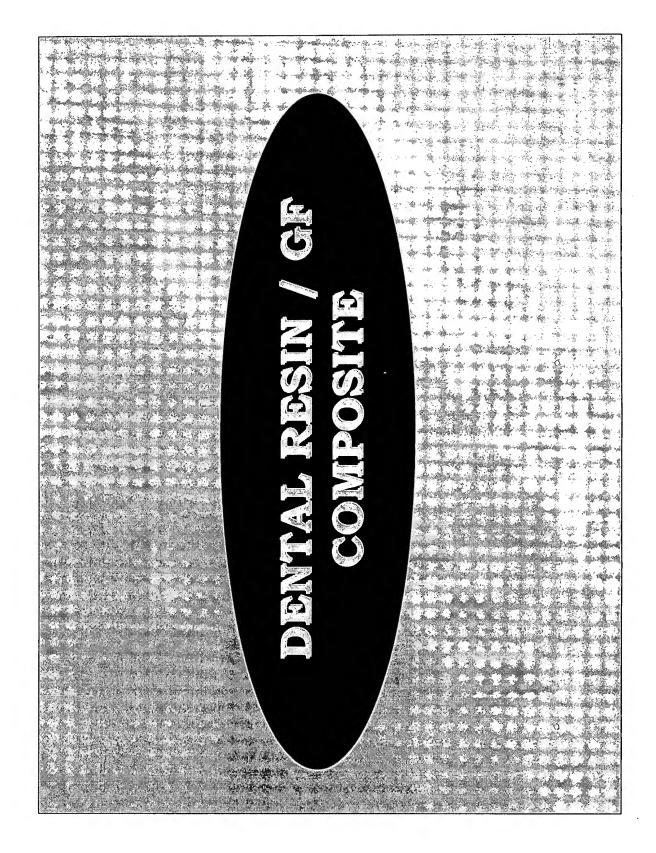
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PRESENTED BY: RENUGA GOPAL
DATE: 19TH OCT 2001

CONTENTS

- Material System
- Dental resin + GF
- Epoxy resin + GF
- Fabrication Method
- Optimal procedure
- Surface Treatment of Glass Fibers
- Testing
- Bending characteristics
- Recovery of Wires
- **Future Work**

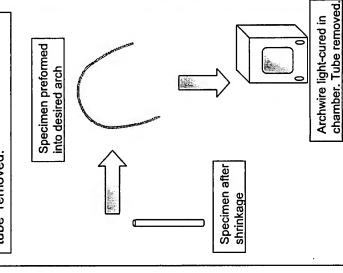


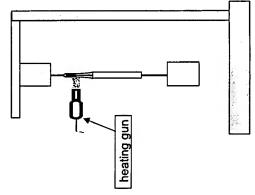
Std Fabrication Method for GF/Dental Resin Wires

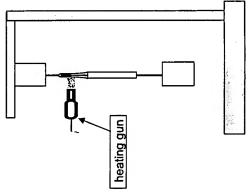
Light-curing resin injected into and hung from a support bar. resin, are inserted into tube Glass fibers, brushed with the tube to fill it up.

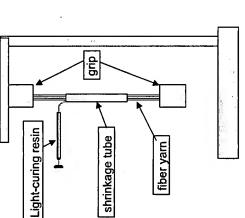
extruded out. Specimen is held in tension. Heat applied using a heating gun. Both ends are heated. Tube vacuumed. Entire tube heat-shrunk. Excess resin is

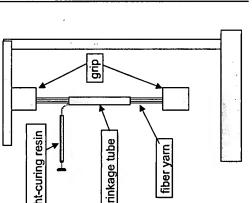
profile and placed in a light-curing chamber for 2 minutes. Shrinkage Specimen shaped into desired tube removed.

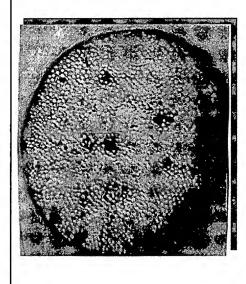










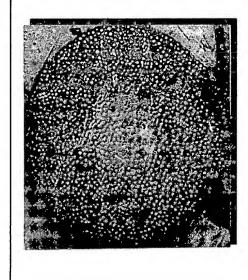


MTD I

- l. Insert tube and fill
- 2. Heat shrink

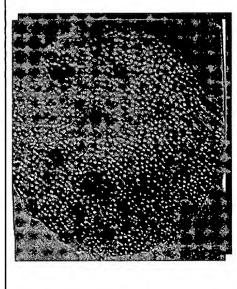
MTD II

- 1. Brush GF
- 2. Insert tube and fill
- . Heat shrink



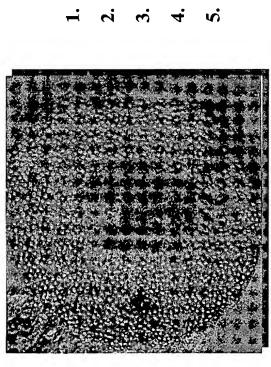
MTD III

- Brush GF
- Insert tube and fill
- 3. Vacuum
- Heat shrink

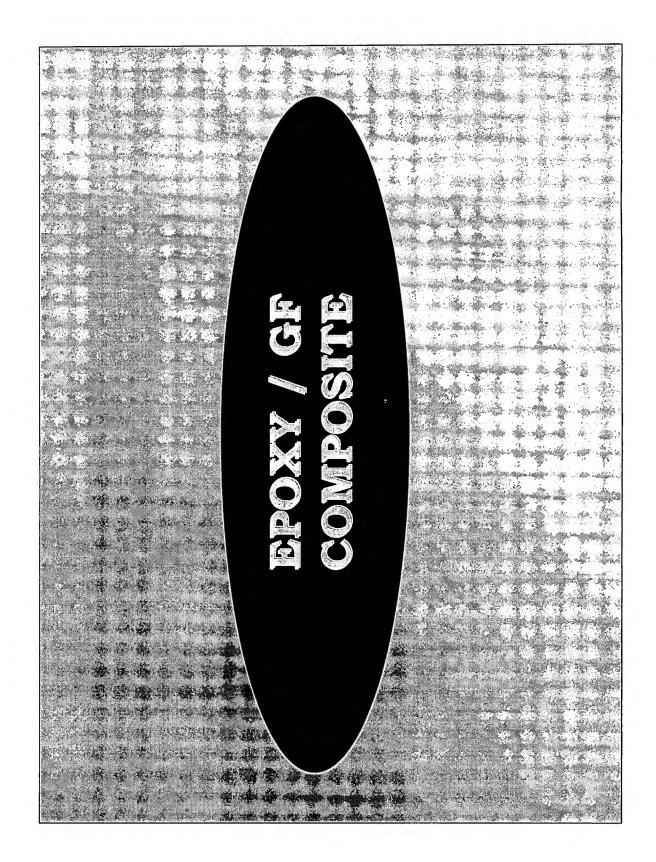


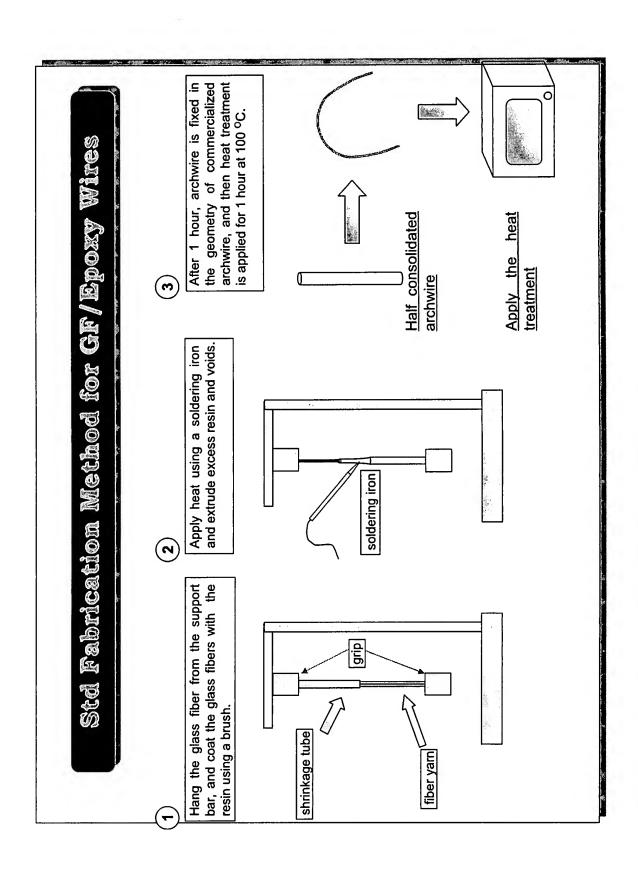
ATD IV

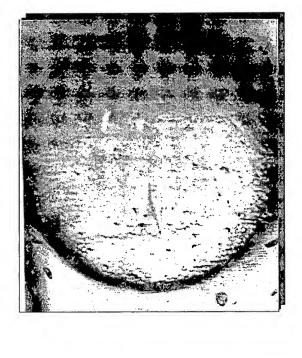
- Brush GF
- 2. Insert tube and fill
- 3. Heat shrink
- Vacuum

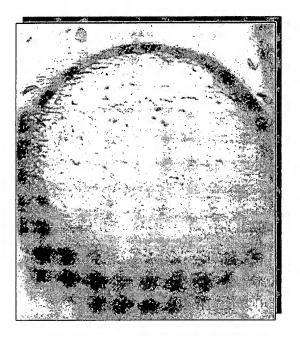


- MTD V
 Brush GF Insert tube and fill
- Heat shrink the ends 1st
- Vacuum
- Heat shrink the whole tube

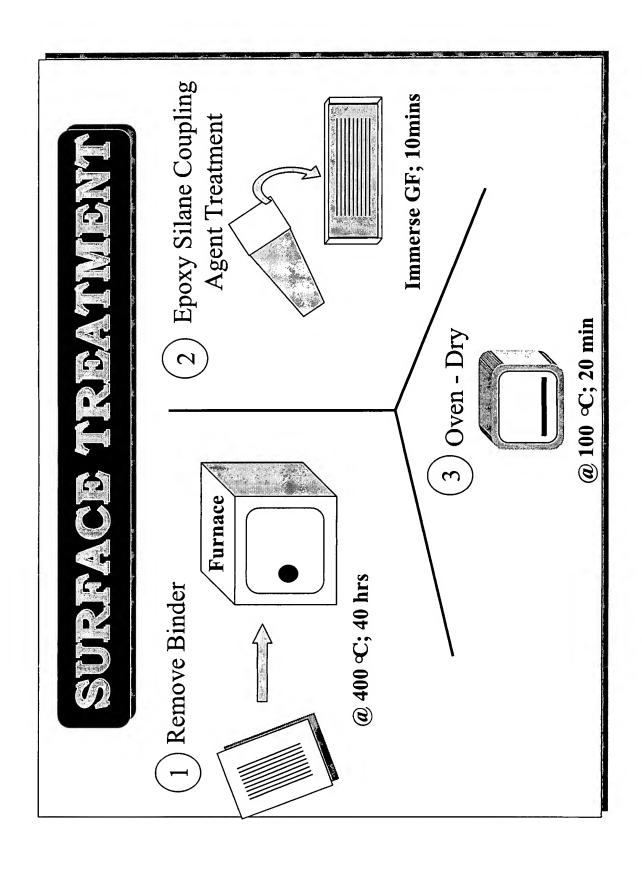


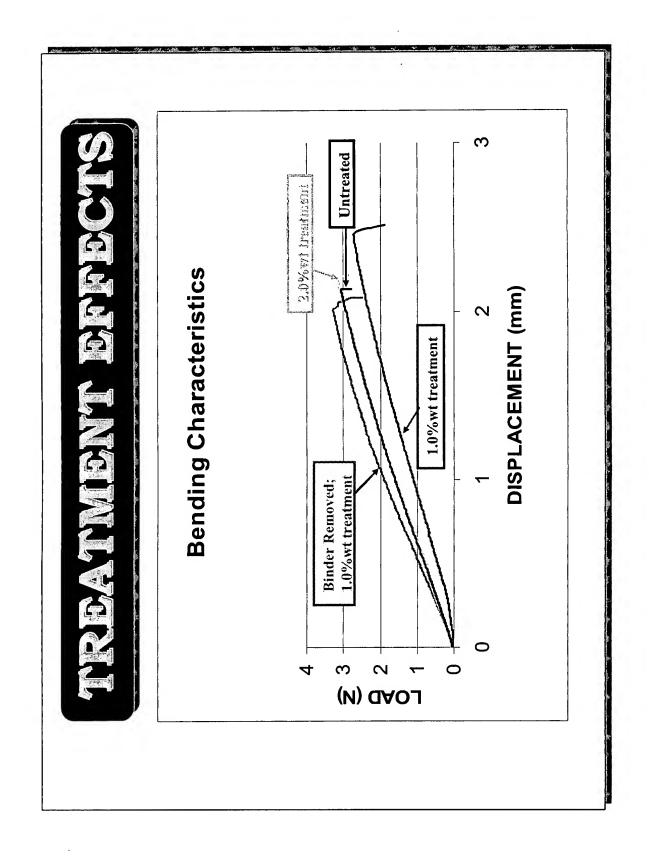






INSERT PICTURE OF SPECIMEN EPOXY RESIN



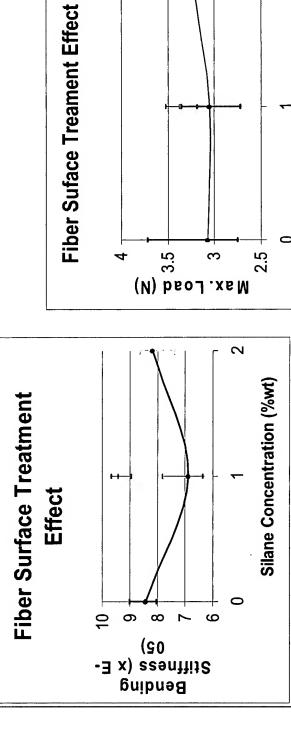


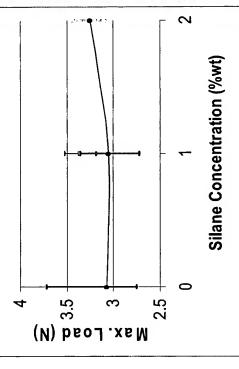
Binder Removed; 1.0%wt treatment

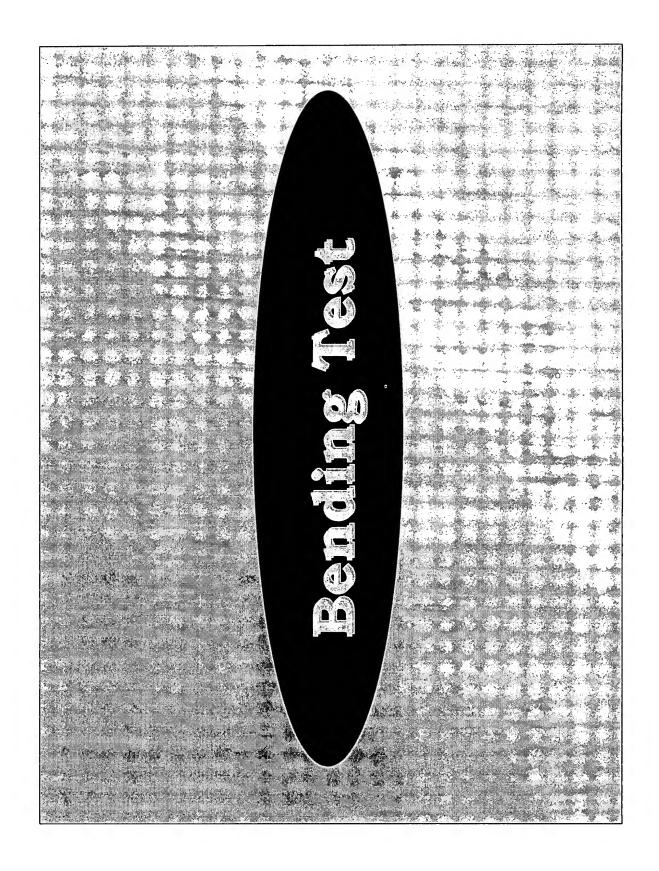
1.0%wt treatment

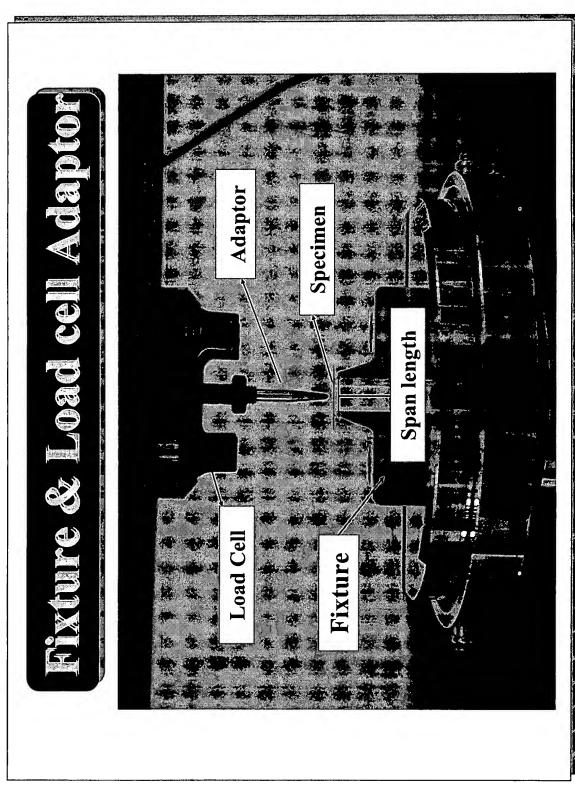
Untreated

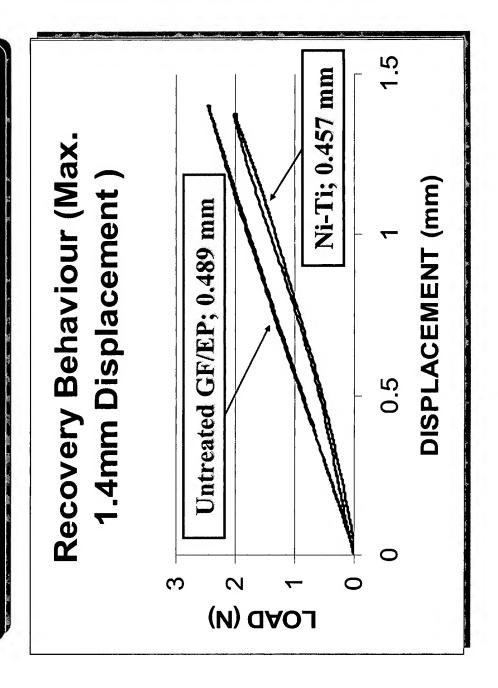












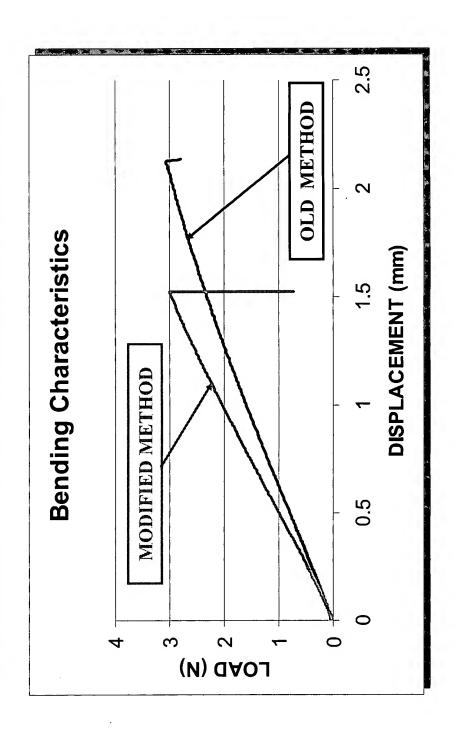
MODERICATION

• BEFORE INSERTING GF INTO TUBE..

- Apply resin to GF
- Squeeze impregnated GF
- Similar to using rollers in pultrusion systems; better impregnation of resin.
- Brush GF again and then insert into tube

MOLLORS-SECLION

EAECO DAIGNES



WORK PLAN.

- Verify the current modification (GF/EP)
- If improvement observed, repeat all testing
- Treatment of GF
- Increase the concentration of coupling agent
- Determine the optimal concentration
- Increase the GF volume fraction
- Dental resin composite.

